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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)



Applicant's or agent's file reference AMS.P52427WO		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/50871	International filing date (day/month/year) 21.11.2003	Priority date (day/month/year) 22.11.2002	
International Patent Classification (IPC) or both national classification and IPC G01V1/22			
Applicant WESTERNGECO SEISMIC HOLDINGS LIMITED			

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of sheets.

- This report contains indications relating to the following items:
 - ☒ Basis of the opinion
 - ☐ Priority
 - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Lack of unity of invention
 - ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Certain documents cited
 - ☐ Certain defects in the international application
 - ☐ Certain observations on the international application

Date of submission of the demand 14.06.2004	Date of completion of this report 18.02.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Schneiderbauer, K Telephone No. +49 89 2399-7613 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 03/50871**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-20 as originally filed

Claims, Numbers

1-25 as originally filed

Drawings, Sheets

1/8-8/8 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	3,5,13-25
	No: Claims	1,2,4,6-12
Inventive step (IS)	Yes: Claims	3,5,13-25
	No: Claims	1,2,4,6-12
Industrial applicability (IA)	Yes: Claims	1-25
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP 03/50871

1.) Reference is made to the following documents:

D1: US-B-6459654 (Bary)	01-10-2002
D2: US-B-6337636 (Zheng)	08-01-2002

2.) **Technical field:** seismic data acquisition

3.) **The independent claims:**

3.1) The present application does not meet the requirements of **Article 33(1),(2) PCT**, because the subject-matter of claim 1 is not new.

Each of the documents D1 and D2 disclose a seismic acquisition system comprising:

- a plurality of seismic data sources capable of generating data (D1: receivers "R" in fig.1; col.5, li.10-12; D2: fig.1, ref.100)
- a data collection system (D1: fig.1, "CCU"; D2: central recording unit 160; col.4, li.43-45) utilizing an open network protocol (D1: col.5, li.51-56; D2: claim 8)
- a line network connecting the data sources to the data collection system and utilizing an open network protocol (D1: col.5, li.48-65; D2: claim 8)
- including a plurality of data source nodes (D1: fig.1, "BA_{pk}", col.5, li.12-18; D2: fig.1, ref. "RSU"; col.4, li.28-36) at which a portion of the plurality of seismic data sources (D1: fig.1, "R"; D2: fig.1 ref.100) are respectively attached to the line network (D1: col.5, li.26-35; D2: col.4, li.35,36; fig.2) and
- a router (D1: fig.1, "RSS_i"; D2: fig.1, "SLCU", ref.140,160; col.4, li.36-43) for routing data generated by the seismic data sources (D1: fig.1,"R"; D2: fig.1, ref."100") to the data collection system (D1: fig.1, "CCU"; D2: ref.160) through the data source nodes (D1: fig.1, "BA_{pk}"; D2: "SLCU") in accordance with the open network protocol (D1: col.3, li.53-59; col.5, li.26-37; col.5, li.50; li.51-56; D2: claim 8).

3.2) There are no objections concerning the subject matter of independent claim 21.

Claim 21 refers to a method for use in a seismic survey comprising the steps of a) assigning two network addresses, b) routing data, c) correlating the network addresses and d) correlating the physical locations of the seismic data sources. Such a method is not disclosed in D1 or in D2 which are considered to represent the closest prior art documents (see point 3.1). The problem such a method solves is that of accurately knowing the physical position of the sources when they impart the acoustic signals.

4.) **The dependent claims:**

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4.1) The subject-matters of claims 2 and 4 and 6-12 are not novel (**Art. 33(1),(2) PCT**); see also cited passages in the ISR.

4.2) Claims 3, 5 and 13-20 depend on claim 1. The subject-matters of these claims 3, 5 and 13-20 are not disclosed by D1 or D2. They solve the problem of providing a system for accurately knowing the physical position of the sources when they impart the acoustic signals. Their subject-matters are considered to be new and inventive.

4.3) Claims 22 - 25 depend on independent claim 21 and are as such also new and inventive.

5.) Industrial applicability (Art.33(1),(4) PCT):

Beyond any doubt the invention, as defined in claims 1 - 25, is industrially applicable.